

m303H.500

Work Order ID 150426

150426

Page 1

Wednesday, August 24, 2016 11:55:21 AM

Item ID: D3622-1

Accept

N900040100

Setup

Start

NS1

Revision ID:

Stop

NS2

Item Name: Ball Stud

Start Date: 8/22/2016

Start Qty: 10.00

10

Cust Item ID:

Required Date: 8/24/2016

Req'd Qty: 10.00

10

Customer:

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date:

AUG 29 2016

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3622

D

100

0.08

100

Hardinge CNC LATHE SMALL

Hardinge

Memo

0.20

Hardinge CNC Lathe Small

1-TURN AS PER FOLIO FA686 & DWG D3622,
FOLIO REV: A
DWG REV: D
2-DEBURR AS REQUIRED

20

Ø

DAS
49
9-89

16/09/26

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.02

Quality Control

20

Ø

DAS
49
9-89

16/09/26

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.03

Quality Control

20

Ø

DAS
14
9-89

16/09/28

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 150426

Wednesday, August 24, 2016 11:55:21 AM

150426

Page 2

Item ID: D3622-1 **Accept** ***N900040100*** **Setup** **Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: Ball Stud
Start Date: 8/22/2016 **Start Qty:** 10.00 ***10*** **Cust Item ID:**
Required Date: 8/24/2016 **Req'd Qty:** 10.00 ***10*** **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run** **Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: <u>Stock</u>	0.00				<u>count</u>	<u>DAS</u>		
130						<u>20</u>	<u>6</u>		<u>SEP 28 2016</u>
Packaging	Memo	0.02					<u>9-89</u>		<u>SEP 28 2016</u>
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00					<u>DAS</u>		
140							<u>21</u>		<u>OCT 03 2016</u>
QC	Memo	0.17					<u>9-89</u>		
Quality Control									
							<u>DAS</u>		
							<u>21</u>		<u>SEP 29 2016</u>
							<u>9-89</u>		



Work Order update only ☐

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS							
Part No. _____			Rework ☐			Skid-tube ☐		Cross tube ☐		Water Jet ☐		Engineering ☐	
NCR No. _____			Scrap ☐			Machining ☐		Small Fab ☐		Prod. Eng. Coord. ☐		Quality ☐	
			Use-as-is ☐			Thermoforming ☐		Finishing ☐		Rec/Store/Packaging ☐		Other ☐	
			Suspected Unapproved ☐			Large Fab ☐		Composite ☐		Supplier ☐			
Date :			Step #:			QTY Effective :						MRB (QSI042) Approval	
Description Work Order Deviation						Disposition						Completed By	
												Lead hand / Supervisor Approval Verification	
												QC / QA Coordinator Approval	
Root Cause			FAULT CATEGORY										
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong			
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions			
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance			
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect			
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing			
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved			
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing			
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish			
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread			
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence			
Past Expiry Date ☐	☐	Manufacturing Process											
Misidentified ☐	☐	Past Due	OTHER :										

Picklist Print

Wednesday, August 24, 2016 11:55:21 AM

Page 1

Work Order ID: 150426

150426

Parent Item: D3622-1

D3622-1

Parent Item Name: Ball Stud

Start Date: 8/22/2016

Required Date: 8/24/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP Rev:A New Issue 07-04-24 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303H0.500		Purchased	No			100	f	5.5900	0.108	1.136842			

M303H0 500

303 HEX BAR .500

Location

Loc Qty

Loc Code

MAT018

5.59

m134984

5.59

2.3

DAS
49
9-89

10/09/26

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DART AEROSPACE LTD		Work Order: 150426
Description: Ball Stud		Part Number: D3622-1
Inspection Dwg: D3622	Rev: D	Page 1 of 1

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.58	+/-0.030	0.570	/		vern	mm L-05
0.50	+/-0.030	0.498	-		"	
Ø0.394	+/-0.010	0.394	/		micro	mm L-01
Ø0.310	+/-0.010	0.308	-		vern	mm L-05
Ø0.215	+/-0.010	0.214	/		↓	
0.155	+/-0.010	0.153	/			
0.313	+/-0.010	0.313	-			
0.478	+/-0.010	0.478	/			
0.630	+/-0.010	0.630	/			
0.125	+/-0.010	0.128	/			
0.563	+/-0.010	0.564	/			
1.19	+/-0.030	1.191	/			
0.3125-24UNF-3A	+0.000/-0.072	.3085	/		micro	mm L-01
M.O.W.	Min = 0.3336 Max = 0.3363	0.3345	-		"	
0.3125-24 UNF 3A	Min=0.3053 Max=0.3125					

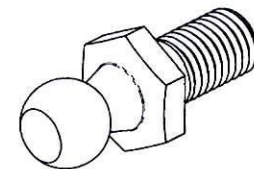
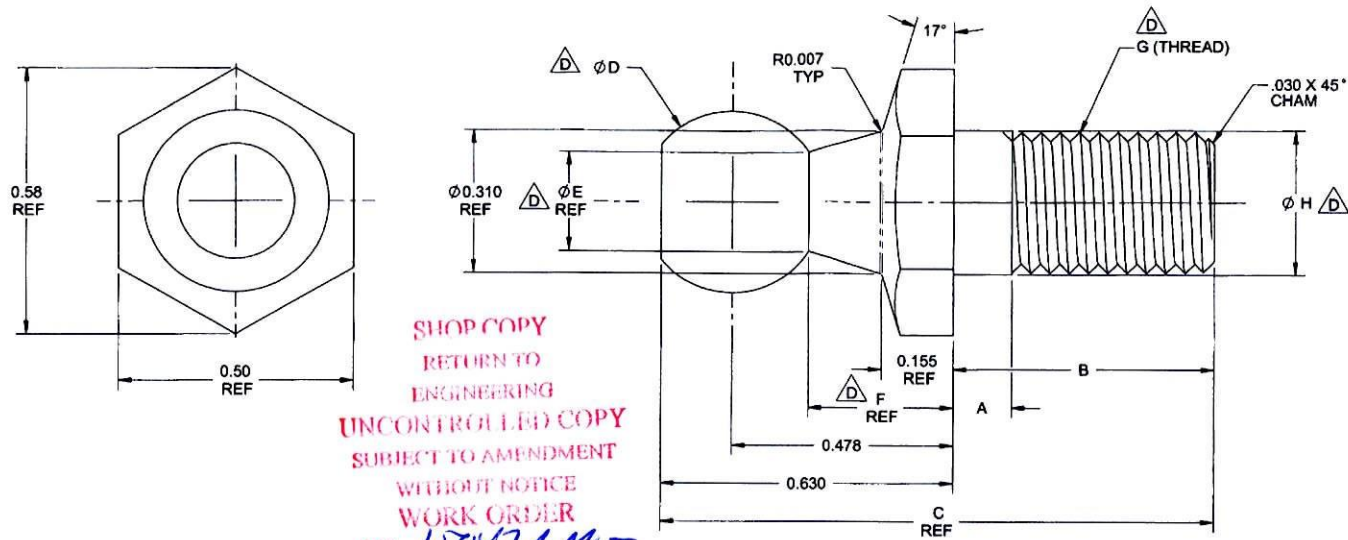
JTS
 16/09/26

Measured by: 49	Checked by: 14	QC Inspector:
Date: 16/09/26	Date: 16/09/28	Date:

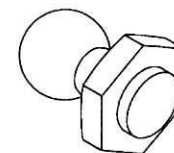
Engineering Approval: (If necessary)	Date:
--	--------------

Rev	Date	Change	Revised by	Approved
A	08.04.15	New Issue	KJ/DD	
B	10.02.02	Dwg Rev updated	KJ	
C	11.02.18	Dimensions updated per Dwg Rev C	KJ	
D	16.06.24	Dwg Rev updated	KJ	

8 7 6 5 4 3 2 1



D3622-1 BALL STUD SHOWN



D3622-11 BALL STUD SHOWN

PART NUMBER	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F	WEIGHT (LBS)	THREAD G	MIN Ø H	MAX
D3622-1	0.125	0.563	1.19	0.394	0.215	0.313	0.03	0.3125-24UNF-3A	0.3053	0.3125
D3622-3	0.125	0.563	1.19	0.394	0.215	0.313	0.03	0.1875-32UNF-3A	0.1840	0.1900
D3622-5	0.090	0.900	1.53	0.394	0.215	0.313	0.04	0.3125-24UNF-3A	0.3053	0.3125
D3622-7	0.060	0.330	0.96	0.394	0.215	0.313	0.03	0.3125-24UNF-3A	0.3053	0.3125
D3622-9	0.090	1.160	1.79	0.394	0.215	0.313	0.04	0.3125-24UNF-3A	0.3053	0.3125
D3622-11	0.060	N/A	0.69	0.394	0.215	0.313	0.02	NOT THREADED	0.270	0.300
D3622-13	0.090	0.680	1.31	0.394	0.215	0.313	0.03	0.3125-24UNF-3A	0.3053	0.3125
D3622-15	0.090	0.430	1.06	0.350	0.202	0.334	0.02	M6 X 1.0	5.82mm	6.00mm

D3622-X BALL STUD

NOTES:

- 1) MATERIAL: AISI 303 HEX BAR
REF DART SPEC M303H0.500
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENT P/N D3622-X & B/N PER QSI 044
- 7) WEIGHT: SEE D3622-X TABLE

RELEASED
2016-04-18
ECN 16-557

APPROVED

D	ADDED -15. ADDED COLUMN D, E AND F. RENAMED SUBSEQUENT COLUMNS.	AK	16.03.15
C	SHEET 1: ADD -5, -7, -9, -11 & -13. ADD D3622-X TABLE. SHEET 2 DELETED	JPH	10.07.20
B	ADD -3 (SHEET 2)	HS	09.09.18
A	NEW ISSUE	MB	07.04.13
REV.	DESCRIPTION	BY	DATE
DESIGN	JPH		
DRAWN	AK		
CHECKED	VS		
MFG. APPR.	JL		
APPROVED	HS		
DE APPR.	DS		
DATE	16.03.15		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D3622** REV. D
SHEET 1 OF 1
TITLE **BALL STUD** SCALE NTS

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